

Wastewater Management Program

List of Approved Systems and Products - *October 15, 2004*

As Established in Chapter 246-272 WAC On-site Sewage Systems

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Secretary of Health
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Office of Environmental Health & Safety

List of Approved Systems and Products - October 2004

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not imply endorsement by the Washington State Department of Health

The presence of a product on this list does not constitute approval of marketing, advertising or labeling practices employed by a manufacturer, nor is it an affirmation of manufacturer claims of product performance. Listing does not constitute endorsement of these products by the Department of Health. Information obtained from the sources listed is the sole responsibility of the manufacturer or other provider.

Introduction

This document replaces the January 2003 edition of the List of Approved Systems and Products.

Specific conditions for the use of each system technology or product are described in the Recommended Standards and Guidance (RS&G) documents relevant to the proprietary device. The most recently published edition of any RS&G can be obtained from local health offices and from the DOH website at the following Internet address: <http://www.doh.wa.gov/ehp/ts/pubs-ww.htm>

Dimensional descriptions are included in the tables. This information is provided to facilitate equipment selection and promote proper application of the technology.

We welcome suggestions to improve this document. If you identify an error or have an idea about how to improve the usefulness of this document, feel free to contact staff in the Wastewater Management Program at the Washington State Department of Health, Office of Environmental Health and Safety at 360-236-3062.

Overview: Conventional, Alternative, and Proprietary Technologies

A conventional on-site sewage system consists of a septic tank and gravity flow or pressure distribution to a gravel-filled drainfield. Any other on-site sewage treatment and/or disposal system is an "alternative" system. Alternative systems are reviewed with the assistance of the Technical Review Committee (TRC) and approved by the Washington State Department of Health (DOH). Upon approval, standards--performance, application, design, and operation and maintenance--and guidance are developed for implementing the specific technology. When standards or guidance exist for a particular type of alternative system, local health officers may issue permits for use of the alternative technology: these documents present the conditions to be met in the use of these sewage treatment and disposal systems.

A notable sub-category of alternative systems is the proprietary device or method. Proprietary devices or methods are those alternative systems or components thereof that are held under patent, trademark, or copyright. Before a local health officer may issue a permit for a proprietary product, it must be approved by the department. The manufacturer must submit information, specifications and performance data to the department for technical evaluation. Upon review and approval, the department lists the device or product on the List of Proprietary Systems and Products. Proprietary devices, products, or methods must be listed on the current list in order for local health officers to issue permits for their installation and use. If a certain manufacturer or product is not listed, or if a listed manufacturer's specific model number is not included on the list, the product IS NOT APPROVED for use in Washington State and may not be permitted by the local health officer.

For questions about specific products not listed, contact the Department of Health at 360-236-3062.

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Descriptions of Alternative Sewage Systems

Aerobic Treatment Units (ATU's)

Aerobic treatment units provide aerobic biodegradation or decomposition of wastewater by bringing the wastewater in contact with air. These units come in different configurations and sizes, and incorporate a variety of mechanical (and non-mechanical) methods to enhance aerobic biodegradation of wastewater. Included are air pumps, air injectors, and biological-contact surfaces (such as pipes, fabric, grids, and rotating disks).

Attached Growth: A biological treatment process in which the microorganisms responsible for the conversion of the organic matter or other constituents to gases and cell tissue are attached to some inert medium such as rocks, slag, ceramic, or plastic materials. Attached growth treatment processes are also known as fixed film processes.

Suspended Growth: A biological wastewater treatment process in which microorganisms responsible for the conversion of the organic matter or other constituents in the wastewater to gases and cell tissue are maintained in suspension within the liquid.

Attached Growth and Suspended Growth treatment processes may be augmented with filtration.

Filtration: A process of separating particulate matter from a fluid by passing it through a permeable material. Typically a process incorporated later in the treatment process as part of the final clarification process, sometimes in advance of disinfection to improve the disinfection process. Filtration also can include the removal of suspended material in effluent by passing of the effluent through a porous medium in which filtration occurs within and on the surface of the filter bed, such as in a packed bed filter.

Two specific types of treatment processes are also used; Rotating Biological Contactor and Sequencing Batch Reactor (SBR)

Rotating Biological Contactor (RBC): A type of attached growth treatment device consisting of disks oriented on a drive shaft which rotates, alternately exposing the attached microorganisms to the atmosphere and the wastewater.

Sequencing Batch Reactor (SBR): A sequential suspended growth process in which all major steps, flow equalization, aeration, and clarification, occurs in the same tank in sequential order. SBRs include intermittent flow batch reactors and continuous flow systems.

Typical Applications: site soil that is poor for sewage treatment. Aerobic treatment units are less reliant upon existing original soil for treatment, but still dependent on the soil for dispersal of the treated wastewater. High quality pre-treatment performance may allow reduced installed drainfield size to reduce the size and cost of initial installation.

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Alternating and Dosing Systems

Dosing System: a system that employs a dose-rest cycle within a conventional gravity system by means of a dosing tank and a dosing device, such as a pump or siphon. The arrangement allows the dosing tank to fill to a predetermined level at which point the dosing device periodically discharges the volume contents to a drainfield or other approved disposal component.

Alternating Drainfields: similar to dosing systems in that dose-rest cycles are provided. However, the rest cycle is long enough for complete drying and oxidation of the clogging layer. The flow from the pretreatment device is intermittently directed into two or more separate drainfields.

Typical Applications: where continuous gravity flow is not feasible or desirable or where pressure distribution design is not used. Can be applied anywhere conventional drainfield design could be used.

Composting Toilets

Composting toilets are designed to store and compost, by aerobic bacterial digestion, human urine and feces, which are non-water-carried. Toilets may include necessary venting, piping, electrical, and/or mechanical components.

Typical Application: where development area is limited. Separating, treating and disposing of grey-water and blackwater separately can have advantages: composting toilets can reduce total wastewater volume by about 50%, and greywater may be treated and disposed of through conventional or alternative means, depending upon site conditions, soil conditions, and scope of development.

Gravelless Drainfield Systems

A drainfield system using preformed structures or gravel-substitute to provide void space for passage and storage of effluent, and to provide an interface with the exposed infiltrative surface. These are functions performed by gravel in the conventional drainfield. Four types of systems are approved: gravelless chamber systems, gravelless pipe systems, gravel-substitute systems, and geocomposites. Site, soil, application, design and installation requirements differ for the three system types.

Typical Application: where cost or availability of gravel is a factor. Gravel is heavy and difficult to move by hand, and in some settings, use of large, heavy equipment for gravel placement is destructive to landscape, plantings, etc. Some gravelless materials / systems lend themselves well to root-level irrigation of shrubs, flowers, and trees. Other applications would be where there is concern about fine materials entrained with gravel, and where there is a desire to access the infiltrative surface for monitoring and maintenance.

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Holding Tank Sewage Systems

A water tight tank designed to hold the entire daily operational waste flow (plus reserve capacity) from an institutional or small commercial facility, together with controls, alarms and pump-out features to facilitate easy and reliable pumping of the sewage from the tank. These tanks are usually constructed of pre-cast concrete but may be fiberglass or polyethylene or poured-in-place concrete.

Typical Applications: generally, these options have limited application except for parks, recreational facilities, and temporary or seasonal facility operation, etc... Holding tanks may be useful in other settings depending on need, site limitations, and desired service intervals.

Incineration Toilets

Self-contained devices that reduce non-water-carried human urine and feces to ash and vapor, including the necessary venting, piping, electrical and/or mechanical components. The process is fueled by gas, fuel oil, or electricity.

Typical Applications: where development area is limited. Separating, treating and disposing of grey-water and blackwater separately can have advantages: incineration toilets can reduce total wastewater volume by about 50%, and greywater may be treated and disposed of through conventional or alternative means, depending upon site conditions, soil conditions, and scope of development.

Mound Systems

These wastewater treatment systems are characterized by sand media (ASTM C-33) placed upon the ground surface, with effluent being treated before discharge from the sand media into the underlying soil. They share the principal attributes of intermittent sand filters except that the media is not contained within a structure. This technology is generally used at sites with shallow soil conditions over a restrictive layer or elevated groundwater table. Proper operation requires influent to be distributed over the media in controlled, discrete doses. In order to achieve accurate dosing, these systems require either a pump or siphon system with associated pump chambers, electrical components and distribution pipe-work. Current Recommended Standards and Guidance require the use of timed dosing of the effluent and timed resting periods.

Typical Applications: where soil on the site is poor for sewage treatment. Mound systems are less reliant upon existing original soil for treatment, but still dependent on the soil for disposal of the treated wastewater.

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Packed Bed Filters / Attached Growth Process

Packed bed filters, are also known as fixed film media units and trickling filters. These wastewater treatment systems are packed with filter media, such as sand, gravel, peat, plastic foam, or geotextile, for the aerobic biological and physical treatment of wastewater constituents. Aeration is achieved by air diffusing through the open voids in the media with oxygen diffusing into the cell mass attached to the media. Some units use a small fan to assist aeration. PBFs come in different configurations and sizes, but incorporate the following common elements: a container for holding the filter medium, the filtering media, a distribution or dosing system for applying the wastewater to be treated to the filtering media, and an underdrain system for removing the treated wastewater. These units can be either intermittently dosed (single-pass) or recirculating (multipass). As the wastewater trickles downward over the media, the bacteria extract the organic matter and use the dissolved oxygen from the wastewater.

Typical Applications: where the site soil is poor for sewage treatment. These systems are less reliant upon existing original soil for treatment; more for disposal of the treated wastewater. High quality pre-treatment performance may allow reduced installed drainfield size, meeting limited area constraints for some sites.

Sand Filters

Wastewater treatment systems characterized by a relatively large container and means for distributing septic tank effluent atop a layer, or layers, of graded sand (or gravel) where, as the wastewater moves downward, it undergoes biochemical aerobic biological & physical treatment. Aeration is achieved by air diffusing through the open voids in the sand with oxygen diffusing into the cell mass attached to the media. There are many different designs of sand filter, but they can generally be divided into two types: single-pass filters, and multiple-pass filter. The RS&G's for the sand filter technologies address three single-pass sand filters (intermittent, sand-lined drainfield trench, and stratified) and one multiple-pass filter (recirculating gravel filter system).

Typical Applications: site soil poor for sewage treatment. These systems are less reliant upon existing original soil for treatment; more for disposal of the treated wastewater. High quality pre-treatment performance may allow reduced installed drainfield size, meeting limited area constraints for some sites.

Subsurface Drip Systems

A subsurface drip system is an efficient pressurized wastewater distribution system that can deliver small, precise doses of effluent directly into the soil utilizing a shallow subsurface disposal/reuse field. Drip distribution piping is small diameter, flexible polyethylene tubing (*dripline*) with small in-line *emitters* (orifices that can discharge effluent at slow, controlled rates, usually specified in gallons per hour). Dripline can be installed by hand or machine trenched or inserted with a vibratory plow or proprietary insertion tool directly into the soil

and backfilled without gravel or *geotextile*. Drip systems can be designed to distribute either septic tank effluent or more highly treated effluent. All systems require additional filtration (specified by the dripline manufacturer) upstream from the dripline. Drip systems are always installed in “closed-loop” systems with both supply and return manifolds and control valves to facilitate periodic system flushing. Timed dosing is required to maximize capillary movement of effluent away from emitters into the soil.

Dripline must meet requirements outlined in the Department's recommended standards and guidance publication for Subsurface Drip Systems and must also be listed on the most current edition of the Department's List of Approved Systems and Products before it can be permitted for use with SDS. All other SDS components (filters, control valves, air-vacuum relief valves & controllers) must meet specifications of the dripline manufacturer.

Typical Applications: anywhere pressure distribution is required. Useful on sites with shallow, compacted or fine textured soils, on sites with steep slopes, on wooded or irregularly shaped sites. Reuse applications (landscape irrigation); and as distribution component for sand filters / mounds.

Upflow Media Filters

Upflow media filters involve the biological treatment of septic tank effluent as it flows upward through filter media within a containment vessel. Much of the treatment is through attached growth anaerobic processes. Various sizes and types of media can be used either singly or in combination in succeeding layers. The anaerobic phase can be followed by an aerobic phase to produce a high quality effluent.

Typical Applications: where the soil on the site is poor for sewage treatment. These systems are less reliant on existing original soil for treatment, but still dependent on the native soil for final dispersal of the treated wastewater. High quality treatment performance may allow for reductions in the required soil depth for the drainfield, and may allow for a reduction in the size of the installed drainfield.

Vault and Pit Privies

A non-portable toilet enclosed in a vented outdoor structure. Vault privies have a waste storage chamber that is watertight or installed in impermeable material. Pit privies have a subsurface waste storage chamber that is not watertight.

Typical Applications: generally, these options have limited application except for parks, recreational facilities, and temporary or seasonal facility operation, etc... Holding tanks may be useful in other settings depending on need, site limitations, and desired service intervals.

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List of Approved Systems and Products

The following pages present the current List of Approved Systems and Products for alternative systems. If a certain manufacturer or product is not listed, or if a listed manufacturer's specific model number is not included on the list, the product IS NOT APPROVED for use in Washington State and may not be permitted by the local health officer.

Disclaimer

The manufacturers' contact information is presented here for information purposes only. Product approval and listing does not constitute departmental approval of marketing, advertising or labeling practices employed by a manufacturer, nor does it constitute an endorsement of these products, nor a preference among the manufacturers.

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Proprietary Treatment Products

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Attached Growth / Suspended Growth Process – Category 1 (Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
EnviroServer ENFG 600 600 gpd ENFG 1200 1200 gpd ENFG 1500 1500 gpd ESG-P 600 gpd	MicroSepTec Inc. 360 Forbestown Road Oroville, CA 95966	Tel: (877) 4SEPTIC Tel: (530) 589-9929 Fax: (530) 589-9179 E-mail: microseptec@microseptec.com Web: http://www.microseptec.com
FAST, Wastewater Treatment Systems MicroFAST 0.5 500 gpd MicroFAST 0.75 750 gpd MicroFAST 0.9 900 gpd MicroFAST 1.5 1500 gpd MicroFAST 3.0 3000 gpd	Bio-Microbics, Inc. 8450 Cole Parkway Shawnee, KS 66227	Tel: (800) 753-3278 Tel: (913) 422-0707 Fax: (913) 422-0808 E-mail: onsite@biomicrobics.com Web: http://www.biomicrobics.com
Jet Aeration Home Aerobic Plant J-500 500 gpd J-600 600 gpd J-750 750 gpd J-1000 1000 gpd J-1250 1250 gpd J-1500 1500 gpd	Jet, Inc. 750 Alpha Drive Cleveland, OH 44143	Tel: (440) 461-2000 Fax: (440) 442-9008 E-mail: email@jetincorp.com Web: www.jetincorp.com/

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Attached Growth / Suspended Growth Process - Category 2 (High Strength Non-Residential or Commercial)		
Product Name / Model	Manufacturer Contact Information	
<p>Nibbler Sewage Treatment System</p> <p>Treatment capacity: .81 lb BOD₅/pod/day</p> <p>Example: 8 pods, 6.5 lbs BOD₅/day</p> <p>Typically 8 pods/unit.</p> <p>Multiple units may be used.</p>	<p>William L. Stuth, Sr. Aqua Test Inc. PO Box 1116 Black Diamond, WA 98010</p>	<p>Tel: (800) 221-3159 Tel: (425) 432-9360</p> <p>Fax: (425) 413-9431</p> <p>E-mail: aquatest@earthlink.net</p> <p>Web: http://www.aquatestinc.com/index.shtml</p>

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Attached Growth / Suspended Growth Process - Category 3 (High Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
<p>Nibbler, Jr. Sewage Treatment System</p> <p>Treatment capacity: 1 lb BOD₅/day</p> <p>Example: 250 gpd, 500 mg/L BOD₅ 500 gpd, 250 mg/L BOD₅</p>	<p>William L. Stuth, Sr. Aqua Test Inc. PO Box 1116 Black Diamond, WA 98010</p>	<p>Tel: (800) 221-3159 Tel: (425) 432-9360 Fax: (425) 413-9431 E-mail: aquatest@earthlink.net Web: http://www.aquatestinc.com/index.shtml</p>
<p>BioMicrobics FAST – MicroFAST ®</p> <p>Model#.....lbs BOD₅/day</p> <p>0.5.....≤ .5 – 1.00 lb 0.75.....1.2 – 1.75 lbs 0.9.....1.25 – 2.00 lbs 1.52.25 – 3.25 lbs 3.04.5 – 6.50 lbs</p>	<p>Bio-Microbics, Inc. 8450 Cole Parkway Shawnee, KS 66227</p>	<p>Tel: (800) 753-3278 Tel: (913) 422-0707 Fax: (913) 422-0808 E-mail: onsite@biomicrobics.com Web: http://www.biomicrobics.com</p>

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Composting Toilets		
Product Name / Model / Loading	Manufacturer Contact Information	
BioLet Composting Toilet XL4-person residential	BioLet USA, Inc. 150 East State Street P.O. Box 548 Newcomerstown, OH 43832	Tel: (800) 5BioLet Fax: (740) 498-4073 E-mail: info@biolet.com Web: http://www.biolet.com/
Clivus Multrum Composting Toilet M-1..... 10 uses/day M-2..... 15 uses/day M-12..... 80 uses/day M-15..... 100 uses/day M-18..... 120 uses/day M-22..... 80 uses/day M-25..... 100 uses/day M-28..... 120 uses/day M-32..... 110 uses/day M-35..... 180 uses/day M-54(ADA)..... 60 uses/day	Clivus Multrum, Inc. 15 Union Street Lawrence, MA 01840	Tel: (800) 425-4887 Fax: (508) 557-9658 E-mail: forinfo@clivusmultrum.com Web: www.clivusmultrum.com
Composting Toilet System, Inc. CTS-4104-person residential CTS-7107-person residential CTS-90460 uses/day CTS-914 120 uses/day CTS-101010-person residential (75 uses/day)	Composting Toilet Systems, Inc. PO Box 1928 Newport, WA 99156-1928	Tel: (888) 786-4538 Tel: (509) 447-3708 Fax: (509) 447-3708 E-mail: cts@povn.com Web: http://www.comtoilet.com

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Composting Toilets		
Product Name / Model / Loading	Manufacturer Contact Information	
Envirolet Composting Toilet MS10 (110v)6-person residential RS2W110(110v) 8-person residential DC12 (12v) 4-person residential RS2W12(12v) 6-person residential Basic Plus (NE) 2-person residential RS2WNE (NE) 4-person residential	Sancor Industries 140-30 Milner Ave Scarborough, Ontario, Canada M1S 3R3	Tel: (800) 387-5126 Tel: (416) 299-4818 Fax: (416) 299-3124 E-mail: info@envirolet.com Web: http://www.envirolet.com
Phoenix Composting Toilet PF-1992-person residential PF-2004-person residential PF-2018-person residential (50 uses/day)	Advanced Composting Systems 195 Meadows Road Whitefish, MT 59937	Tel: (406) 862-3854 Fax: (406) 862-3855 E-mail: Web:
Sun-Mar Composting Toilet X.L. (Excel) 3-person residential Centrex A/F4-person residential Centrex A/F AC/DC3-person residential Centrex Plus A/F5-person residential Centrex Plus A/F AC/DC 4-person-residential Compact1-person residential Ecolet 1101-person residential Ecolet M/RV1-person residential Excel NE 2-person residential	Sun-Mar Corporation 5370 South Service Road, Burlington, Ontario, Canada L7L 5L1	Tel: (800) 461-2461 Tel: (905) 332-1314 Fax: (905) 332-1315 E-mail: compost@sunmar.com Web: http://www.sun-mar.com

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Incineration Toilets		
Product Name / Model / Loading	Manufacturer Contact Information	
Incinolet – Electric Incinerator Toilet CF.....120 volt.....4-person TR.....240 volt.....8-person WB.....120/240 volt.....4/8 -person	Research Products/ Blankenship 2639 Andjon Drive Dallas, TX 75220	Tel: (800) 527-5551 Tel: (214) 358-4238 Fax: (214) 350-7919 E-mail: sales@incinolet.com Web: http://www.incinolet.com

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Packed Bed Filtration / Attached Growth Process		
Category 1 (Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
<p>AdvanTex® Wastewater Treatment System</p> <p>AX20 500 gpd AX15 – 2 800 gpd AX20 – 2 1000 gpd AX15 – 3 1200 gpd *AX20 – 3 1500 gpd *AX20 – 4 2000 gpd *AX100 2500 gpd *AX100 – 2 3500 gpd</p> <p>*System applications greater than 6 bedrooms and applications other than single family residential will require a design review by Orenco Systems, Inc.</p>	<p>Orenco Systems Inc. 814 Airway Avenue Sutherlin, Oregon 97479</p>	<p>Tel: (800) 348-9843 Fax: (541) 459-2884 E-mail: scarter@orenco.com Web: http://www.orenco.com/</p>
<p>Alternating Intermittent Recirculating Reactor- AIRR (Classified as a Recirculating Sand Gravel Filter).</p> <p>Maximum design volume loading rate is 5-gallons/day/ft² residential strength.</p>	<p>SPEC Industries, Inc 550 Parkson Road Henderson, NV 89015</p>	<p>Tel: (702) 558-4444 Fax: (702) 558-4563 E-mail: Sales@specind.biz Web: www.specind.biz</p>
<p>Bioclere</p> <p>#1612500 gpd</p>	<p>AWT Environmental, Inc. 241 Duchaine Boulevard New Bedford, Massachusetts 02745-1209</p>	<p>Tel: (508)-998-7577 Fax: (508)-998-7177 Web: http://www.aquapoint.com</p>

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Rotating Biological Contactor(RBC) Process - Category 1 (Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
Five Star 505 Series Rotating Biological Contactor Treatment Systems 505KA.....500 gpd 505 KR.....600 gpd 505 KI600 gpd 505-KI-T..... 1200 gpd 505-KI-Q.....2400 gpd	Five Star Environmental Systems, Inc. PO Box 1768 Kingston, WA 98346-1768	Tel: (360) 297-3633 Fax: (360) 297-3636 E-mail: fivestar@silverlink.net Web: www.fivestarenviro.com

Sequencing Batch Reactor with Filtration Process - Category 1 (Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
TRD-1000 TRD-1000-500.....500 gpd TRD-1000-600.....600 gpd TRD-1000-700.....700 gpd TRD-1000-800.....800 gpd TRD-1000-900.....900 gpd TRD-1000-1000..... 1000 gpd	Advanced Septic Treatment Systems, Inc. 8000 Parker Rd. Sedro Woolley, WA 98284	Tel: (360) 856-2142 Tel: (360) 856-0551 E-mail: trd1000ww@aol.com Web: www.advancedsepticssystems.com

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Suspended Growth Process - Category 1 (Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
<p>Clearstream Wastewater Treatment System</p> <p><i>(Without Spinfilter Assembly)</i></p> <p>500N & 500NC..... 500 gpd 600N & 600NC..... 600 gpd 750N & 750NC..... 750 gpd 1000N & 1000NC..... 1000 gpd 1500N & 1500NC..... 1500 gpd</p> <p><i>(With – ES1100 Spinfilter Assembly)</i></p> <p>500N & 500NC..... 500 gpd 600N & 600NC..... 600 gpd 750N & 750NC..... 750 gpd 1000N & 1000NC..... 1000 gpd 1500N & 1500NC..... 1500 gpd</p> <p><i>These products tested using pretreatment by 250-gallon septic tank.</i></p>	<p>Clearstream Wastewater Treatment Systems, Inc. PO Box 7568 Beaumont, TX 77726</p>	<p>Tel: (409) 755-1500 Fax: (409) 755-6500 E-mail: Web: http://www.clearstreamsystems.com</p>
<p>Hydro-Action</p> <p>AP500 500 gpd AP-600 600 gpd AP-750 750 gpd AP-1000 1000 gpd AP-1500 1500 gpd</p>	<p>Hydro-Action Industries 8645 Broussard Road Beaumont, TX 77713</p>	<p>Tel: (800)-370-3749 Tel: (409) 892-3600 Fax: (409) 246-2481 E-mail: webmaster@hydro-action.com Web: http://www.hydro-action.com</p>
<p>Nayadic Residential Sewage Treatment System</p> <p>M-6A-F/M-6..... 500 gpd M-6A-C/M-6AC-F..... 500 gpd M-8A-F/M-8A..... 600 gpd M-1050-F/M-1050A.... 800 gpd M-1200-F/M-1200A.. 1000 gpd M-2000-F/M-2000A.. 1500 gpd</p>	<p>Consolidated Treatment Systems 1501 Commerce Ctr. Dr. Franklin, OH 45005</p>	<p>Tel: (937) 746-2727 Fax: (937) 746-1446 E-mail: bennette@consolidatedtreatment.com Web: http://www.consolidatedtreatment.com/</p>

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Suspended Growth Process - Category 1 (Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
Whitewater Aerobic Treatment Unit DF40-C 400 gpd DF40-F 400 gpd DF40-CA 400 gpd DF40-FT 400 gpd DF40-FFT 400 gpd DF40-FF 400 gpd DF40-CC 400 gpd DF50-FF 500 gpd DF50-CC 500 gpd DF50-C 500 gpd DF50-F 500 gpd DF50-CA 500 gpd DF50-CA-3 500 gpd DF50-FT 500 gpd DF50-FFT 500 gpd DF60-FF 600 gpd DF60-CC 600 gpd DF60-C 600 gpd DF60-F 600 gpd DF60-CA 600 gpd DF60-FT 600 gpd DF60-FFT 600 gpd DF75-FF 750 gpd DF75-CC 750 gpd DF75-C 750 gpd DF75-F 750 gpd DF75-CA 750 gpd DF100-FF 1000 gpd DF100-CC 1000 gpd DF100-C 1000 gpd DF100-F 1000 gpd DF100-CA 1000 gpd DF150-FF 1500 gpd DF150-CC 1500 gpd DF150-C 1500 gpd DF150-F 1500 gpd DF150-CA 1500 gpd	Delta Environmental Products, Inc. 8275 Florida Blvd. PO Box 969 Denham Springs, LA 70726	Tel: (800) 219-9183 Fax: (225) 664-9467 E-mail: desales@deltaenvironmental.com Web: http://www.deltaenvironmental.com

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Suspended Growth Process - Category 1

(Typical Strength Residential)

Product Name / Model	Manufacturer Contact Information	
<p>Whitewater Aerobic Treatment Unit (cont'd)</p> <p>UC-50-F 500 gpd UC50-CA 500 gpd UC50CA3 500 gpd UC50-FF 500 gpd</p> <p>UC50A-FF 500 gpd UC50A-CA 500 gpd</p> <p>UC60-FF 600 gpd UC60-CA 600 gpd</p> <p>UC75-FF 750 gpd UC-CA 750 gpd</p> <p>UC90-F 900 gpd UC90-CA 900 gpd UC90-FF 900 gpd</p> <p>UC100A-FF 1000 gpd UC100A-CA 1000gpd</p> <p>UC120-F 1200 gpd UC120-CA 1200 gpd UC120-FF 1200 gpd</p> <p>UC150-FF 1500 gpd UC150CA 1500 gpd</p> <p>UC150A-FF 1500 gpd UC150A-CA 1500 gpd</p>	<p>Delta Environmental Products, Inc. (cont'd)</p>	
<p>Whitewater Aerobic Treatment Units in combination with the UV "The Disinfector" unit.</p> <p>DF-50 500 gpd</p>	<p>Delta Environmental Products, Inc. 8275 Florida Blvd. PO Box 969 Denham Springs, LA 70727</p>	

(cont'd)

Tel: (800)-219-9183

Fax:

E-mail:
desales@deltaenvironmental.com

Web:
<http://www.deltaenvironmental.com>

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Suspended Growth with Filtration Process - Category 1 (Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
Multi-Flo Waste Treatment Systems FTB-0.5 500 gpd FTB-0.6 600 gpd FTB-0.75 750 gpd FTB-1.0 1000 gpd FTB-1.5 1500 gpd	Consolidated Treatment Systems 1501 Commerce Ctr. Dr. Franklin, OH 45005	Tel: (937) 746-2727 Fax: (937) 746-1446 E-mail: bennette@consolidatedtreatment.com Web: http://www.consolidatedtreatment.com/
Singular Individual Home Wastewater Treatment System. (900 series) 900-500 500 gpd 900-750 750 gpd 900-1000 1000 gpd 900-1250 1250 gpd 900-1500 1500 gpd Singular Individual Home Wastewater Treatment System. (960 series) 960-500 500 gpd 960-600 600 gpd 960-750 750 gpd 960-1000 1000 gpd 960-1250 1250 gpd 960-1500 1500 gpd	Norweco Wastewater Equipment Co. 220 Republic Street Norwalk, OH 44857-1196	Tel: (419) 668-4471 Fax: (419) 663-5440 E-mail: email@norweco.com Web: http://www.norweco.com

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Upflow Media Filtration - Category 1		
(Typical Strength Residential)		
Product Name / Model	Manufacturer Contact Information	
Glendon BioFilter Treatment System M3 240 - 480 gpd* M31 90 - 500 gpd* *Multiple units, in the same or a variety of sizes, may be used in parallel to accomplish daily design flows to 3,500 gpd.	Glendon BioFilter Technologies, Inc. 25448 Port Gamble Rd Poulsbo, WA 98370	Tel: (360) 297-7066 Fax: (360) 297-8479 E-mail: info@glendon.com Web: http://www.glendon.com

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Vault Toilets		
Product Name / Model / Loading	Manufacturer Contact Information	
<p>CXT</p> <p>Cascadian 1000 gal</p> <p>Gunnison 1000 gal</p> <p>Rocky Mtn 1000 gal</p> <p>Tioga.....2000 gal</p> <p>Tioga Special.....2000 gal</p> <p>Double Cascadian2000 gal</p> <p>Double Cascadian w/ Chase.....2000 gal</p> <p>Double Rocky Mtn2000 gal</p> <p>Double Rocky Mtn w/ Chase.....2000 gal</p>	<p>CXT, Inc.</p> <p>3808 North Sullivan Road, Bldg. #7 Spokane, WA 99216</p>	<p>Tel: (800) 696-5766</p> <p>Tel: (509) 921-8766</p> <p>Fax: (509) 928-8270</p> <p>E-mail: info@cxtinc.com</p> <p>Web: www.cxtinc.com/</p>
<p>Romtec</p> <p>(750 or 1,000 gallon vaults)</p> <p>SST..... Original Restroom</p> <p>SST..... Traditional Restroom</p> <p>SST..... Aspen Wood Design Single Restroom</p> <p>SST..... Double Restroom Wood Design</p> <p>SST..... Aspen Concrete Single Restroom</p> <p>SST..... Aspen Concrete Double Restroom</p>	<p>Romtec, Inc.</p> <p>18240 North Bank Road Roseburg, OR 97470</p>	<p>Tel: (541) 496-3541</p> <p>Fax: (541) 496-0803</p> <p>E-mail: info@romtec.com</p> <p>Web: www.romtec.com</p>
<p>WRS Vault Evaporator System</p> <p>WRS "Outback"1180 gal (360 gal. waste capacity)</p>	<p>Biological Mediation Systems</p> <p>PO Box 8248 Fort Collins, CO 80526</p>	<p>Tel: (800)-524-1097</p> <p>(970)-221-5949</p> <p>Fax: (970)-221-5748</p> <p>Web: www.biologicalmediation.com</p>

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Proprietary Distribution Products

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Gravelless Drainfield Systems / Geocomposite Drainfields							
Product / Model	Unit Size W / L / H (inches)	Void Space per foot ³ of media (cu. ft)	Void Space per arrangement of units (cu. ft)	Void Space per linear foot of trench (cu. ft)	Infiltrative Surface per arrangement of units (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)	Manufacturer
Eljen In-Drain System							Eljen Dorporation 10 North Main Street Suite 216 West Hartford, CT 06107 Tel: Corp. (800) 444-1359 Tel: (860) 610-0426 Fax: (860) 610-0427 E-mail: info@eljen.com Web: http://www.eljen.com
In-Drain Type B	36" x 48" x 7"	0.52	6.3	1.57	12	3	
In-Drain Type Half B	36" x 24" x 7"	0.52	3.15	1.57	6	3	

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Gravelless Drainfield Systems / Gravelless Chamber Products

Note: Infiltrative surface area is calculated from outside dimensions. Actual area may be less for some products due to support pads and dimensional variation

Product / Model	Unit Size W / L / H (inches)	Void Space per unit (cu. ft.)	Void Space per linear foot (cu. ft)	Infiltrative Surface per unit (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)	Manufacturer Contact Information
Bio-Diffuser Plastic Leaching Chamber System						PSA, Inc. 4640 Truman Blvd Hilliard, OH 43026 Tel: (800) 821-6710 Fax: (614) 658-0204 E-mail: steve.helmrich@ads-pipe.com Web: http://www.ads-pipe.com
Standard (14")	34" x 76" x 14"	14.0	2.25	17.9	2.8	
Low Profile (11")	34" x 76" x 11"	8.5	1.36	17.9	2.8	
Bio 2	12.7" x 86.9" x 11.9"	5.0	0.7	9.0	1.3	
Bio 3	17.7" x 86.9" x 11.9"	8.6	1.2	13.2	1.8	
Cultec Field Panel System						Cultec, Inc. PO Box 280 Brookfield, CT 06804 Tel: (800) 4CULTEC Tel: (203) 775-4416 Fax: (203) 775-1462 E-mail: custservice@cultec.com Web: http://www.cultec.com
C1 Field Drain Contactor	12" x 96" x 8.5"	3.4	0.4	8.0	1.0	
C2 Field Drain Contactor	24" x 96" x 8.5"	6.7	0.8	16.0	2.0	
C3 Field Drain Contactor	36" x 96" x 8.5"	10.1	1.3	24.0	3.0	
C4 Field Drain Contactor	48" x 96" x 8.5"	13.4	1.7	32.0	4.0	
Contactor 75	26.5" x 75" x 12.4"	10.0	1.6	13.8	2.2	
Contactor 100 H-10	36" x 7.4' x 12.5"	13.3	2.1	18.8	3.0	
Contactor 100 H-20	36" x 7.5' x 12.5"	13.3	2.1	18.8	3.0	
Contactor 125	28" x 78" x 18.0"	16.7	2.7	14.6	2.3	
Recharger 330	52" x 75" x 30.5"	55.6	8.9	27.1	4.3	
Contactor EZ-24	16" x 8.5' x 12.5"	50	6.25	8.8	1.1	

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Gravelless Drainfield Systems / Gravelless Chamber Products

Note: Infiltrative surface area is calculated from outside dimensions. Actual area may be less for some products due to support pads and dimensional variation.

Product / Model	Unit Size W / L / H (inches)	Void Space per unit (cu. ft.)	Void Space per linear foot (cu. ft.)	Infiltrative Surface per unit (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)	Manufacturer Contact Information
EnviroChamber Leaching System						Hancor, Inc. PO Box 1047 Findlay, OH 45839-1047 Tel: (419) 422-6521 Fax: (419) 424-8300 E-mail: drainage@hancor.com Web: http://www.hancor.com
Standard	34" x 75" x 12"	11.63	1.85	17.7	2.8	
High Capacity	34" x 75" x 17.5"	18.3	2.93	17.7	2.8	
Infiltrator Chamber Leach Field System						Infiltrator Systems, Inc. PO Box 768 Old Saybrook, CT 06475 Tel: (800) 718-2754 Fax: (860) 577-7001 E-mail: info@infiltratorsystems.com Web: http://www.infiltratorsystems.com
Standard	34" x 75" x 12"	10.3	1.65	17.7	2.8	
High Capacity	34" x 75" x 16"	16.3	2.61	17.7	2.8	
Equalizer 24	15" x 101" x 11"	4.45	0.54	10.5	1.3	
Equalizer 36	22" x 101" x 11"	8.42	1.00	15.4	1.8	
Quick 4 Standard	34" x 48" x 12"	5.82	1.46	11.3	2.8	

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Gravelless Drainfield Systems / Gravelless Drainfield Pipe Products						
Single-Pipe						
Product / Model	Unit Size OD / L (inches)	Void Space per unit (cu. ft.)	Void Space per linear foot (cu. ft)	Infiltrative Surface per unit (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)	Manufacturer Contact Information
Goldline GLP Gravelless Leachbed Pipe						Prinsco, Inc. 108 West Highway 7 PO Box 265 Prinsburg, MN 56281 Tel: (800) 992-1725 Tel: (320) 978-4116 Fax: (320) 978-8602 E-mail: info@prinsco.com Web: http://www.prinsco.com
GLP 8	9.5" OD x 120"	4.9	0.49	7.9	0.8	
GLP 9	11.6" OD x 120"	7.3	0.73	9.7	1.0	

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Gravelless Drainfield Systems / Gravelless Drainfield Pipe Products

Multiple-Pipe

Product / Model	Unit Size W/L/H (inches)	Void Space per unit (cu. ft.)	Void Space per linear foot (cu. ft)	Infiltrative Surface per unit (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)	Manufacturer Contact Information
PTI Multi-Pipe Systems (MPS)						Plastic Tubing Industries 18314 Mathis Road Waller, TX 77484 Tel: (800) 780-5121 Tel: (407) 298-5121 Fax: (407) 578-9393 E-mail: ptipipe@ptifla.com Web: http://www.ptifla.com
MPS-9	23.125" x 120"x 8.5"	12	1.2	19.3	1.93	
MPS-11	27.75"x 120" x 8.5"	14.6	1.46	23.1	2.31	
MPS-13	32.375" x 120" x 8.5"	17.3	1.73	27.0	2.70	

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Gravelless Drainfield Systems / Gravel Substitute Products							
Product / Model	Unit Size W / L / H (inches)	Void Space per foot ³ of media (cu. ft)	Void Space per arrangement of units (cu. ft)	Void Space per linear foot of trench (cu. ft)	Infiltrative Surface per arrangement of units (sq. ft.)	Infiltrative Surface per linear foot (sq. ft.)	Manufacturer
EZflow systems							Ring Industrial Group/EZflow 3600 Crates Way Building 2, Suite A The Dalles, OR 97058 Tel: Corporate (800) 280-6333 Tel: (503) 492-2500 Fax: (503) 492-0208 E-mail: amauck@easystreet.com Web: http://www.ezflowlp.com
1003-H	10" x 30" x 120" Horizontal arrangement of three 10" diameter "tubes" in a 30" wide trench.	0.4	7.2	0.72	25	2.5	
1003-T	10" x 24" x 120" Triangular arrangement of three 10" diameter "tubes" in 24" wide trench.	0.4	7.2	0.72	20	2.0	
1203-H	12" x 36" x 120" Horizontal arrangement of three 12" diameter "tubes" in a 36" wide trench.	0.4	10.1	1.01	30	3.0	

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Subsurface Drip System Dripline

Note: All dripline used for wastewater applications must be color-coded (purple or pantone) to identify the non-potable source.

Dripline must meet requirements outlined in the Department's recommended standards and guidance publication for Subsurface Drip Systems and must also be listed on the most current edition of the Department's List of Approved Systems and Products before it can be permitted for use with SDS. All other SDS components (filters, control valves, air-vacuum relief valves & controllers) must meet specifications of the dripline manufacturer.

Product Name / Model	Manufacturer Contact Information	
<p>Bioline* (pressure compensating type) dripline</p> <ul style="list-style-type: none"> 0.57 inch ID, (available in 12, 18 and 24 inch emitter spacing, and with emitter discharge rates 0.42, 0.62 and 0.92 gallons per hour (GPH) <p>*(“Techfilter” disk filter with root inhibitor implanted into replaceable disk cartridge is required and must be specified for use with all Netafim dripline.)</p>	<p>Netafim 5470 E. Home Ave. Fresno, CA 93727</p>	<p>Tel: (888)-NETAFIM Fax: (55)9 453-6803 E-mail: FHarned@Netafimusa.com Web-site: www.netafimusa.com</p>
<p>Wasteflow PC (pressure compensating type) dripline</p> <ul style="list-style-type: none"> 0.55 inch ID; (available in 6, 12 and 24 inch emitter spacing, and with emitter discharge rates 0.53 and 1.03 gallons per hour (GPH) 	<p>Geoflow, Inc. 506 Tomal Plaza Corte Madera, CA 94925</p>	<p>Tel: (415) 927-6000 (800) 828-3388 Fax: (415) 927-0120 E-mail: rr@geoflow.com Web-site: http://www.geoflow.com</p>

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Treatment Standard 1 and 2

Overview of Treatment Standards: Applying Performance Standards to Marginal Sites using Alternative On-site Sewage Treatment Systems

To strike a balance between site conditions and development plans, and between public health and environmental protection, the current State Board of Health (SBOH) rules for on-site sewage systems have integrated the concepts of using performance standards and using various types of sewage treatment and disposal systems.

- For sites and development plans consistent with the minimum standards for conventional sewage systems, the rules as presented in Chapter 246-272 WAC are applied.
- For sites where all conditions can be met except for vertical separation, pressure distribution in the drainfield may be substituted for up to 12 inches of vertical separation to retain the balance needed.
- For other more marginal situations, or sites where the desired development raises health protection issues to be addressed by the system designer, the rules employ use of two performance standards: Treatment Standard 1 (TS1) and Treatment Standard 2 (TS2).

Treatment Standards 1 and 2

Standard	Treated effluent from Alternative On-site Sewage Systems must meet (or exceed) these performance standards:		
	BOD ₅ (5-day Biochemical Oxygen Demand) Maximum 30-day average (mg BOD / liter Effluent)	TSS (Total Suspended Solids) Maximum 30-day average (mg TSS / liter Effluent)	Fecal Coliform Maximum 30-day geometric mean, (Colonies/100 ml Effluent)
Treatment Standard 1:	< 10 mg *	< 10 mg	< 200
Treatment Standard 2:	< 10 mg *	< 10 mg	< 800

* A 30 day average of less than 8.3 mg /L of carbonaceous biochemical oxygen demand (5-day CBOD₅) will be accepted in lieu of the BOD₅ value when data are submitted in the course of NSF Standard No. 40 testing and reporting protocols.

The concept of integrating performance standards with on-site sewage systems management began when the SBOH, in response to legislative action, adopted amendments and additions to Chapter 246-272 WAC. These performance standards, which became effective 11/10/89, only applied to repair and replacement of on-site sewage system failures along marine shorelines. To address lot size and soil limitations often found at these sites, the amendments introduced the concept of TS1 and TS2, and linked the use of systems capable of meeting these standards to address limited vertical and horizontal separation situations. When the State Board of Health revised the on-site sewage system rules on January 1, 1995, this concept was expanded to apply the two performance standards beyond repair of marine shoreline system failures to protect vulnerable waters throughout the state.

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Application of Treatment Standards

Permit Event	System Must Meet Treatment Standard	Applies When & Where:
Repair or Replacement	1 or 2	Horizontal separation to a water supply or surface water cannot meet the standards for new construction. ¹
New Construction or Expansion	2	<ul style="list-style-type: none"> Vertical separation is less than 2 feet in Soil Types 1B, 2A & B, and 3-6.² Development where Soil Type 1A exists.³

¹ Table VI in the SBOH rules, Chapter 246-272 WAC

² Table IV in the SBOH rules, Chapter 246-272 WAC

³ Table IV in the SBOH rules and Table VII in the SBOH rules, Chapter 246-272 WAC

Treatment Standards 1 and 2 are applied to existing and new sites *indirectly*:

- The Department of Health (DOH) reviews the performance data of alternative on-site sewage treatment systems and identifies those meeting parameters of the two standards. At least annually, DOH prepares a list of these systems and products.
- Certain site conditions determine the need for an on-site sewage system to meet Treatment Standard 1 or 2. Systems and products meeting the performance standards may be used at these conditional sites without further evaluation of the treatment system's performance.
- Appropriate design, installation and inspection, followed by proper operation by the system's owner and routine monitoring and maintenance by qualified service providers support presumption of satisfactory performance.

Treatment Standard 1 and 2 are stringent wastewater treatment standards. Not all systems or products meet the standards.

- Performance results of some systems may qualify them in two, but not all three, of the performance parameters. An example of this exists with the intermittent sand filter. Its performance level meets all the parameters of Treatment Standard 2, but meets only the BOD₅ and TSS parameters of Treatment Standard 1. The effluent fecal coliform count exceeds Treatment Standard 1 criteria, and the system, therefore, does not qualify for TS1.
- For some systems or products that have been researched or tested, effluent samples were analyzed for only two, instead of all three of the parameters. An example of this exists with some aerobic treatment units that have been performance-tested according to the National Sanitation Foundation (NSF) Standard No. 40. This testing protocol evaluates products for BOD₅ (CBOD₅) and TSS, but not for fecal coliform; thus, only two of the three performance parameters have been tested for. Unless the manufacturer requests sample analysis for fecal coliforms, no comparable test data may exist to evaluate the system for fecal coliform reduction.

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List of Systems Meeting Treatment Standards 1 and/or 2

The tables on the following two pages identify the currently approved sewage treatment systems and products that meet the criteria for Treatment Standard 1 and / or 2. Also listed are systems and products that meet the BOD₅ and TSS parameters but not the fecal coliform parameter of the standards. Local health officers may permit these two-criterion systems and products at marginal sites that would otherwise require Treatment Standards 1 or 2 **if additional treatment and/or effluent disinfection is provided to address the fecal coliform criteria of either standard.**

Experience with effluent disinfection of small on-site wastewater systems among those working in the on-site sewage system arena in Washington State is limited. Manufacturer product literature and R&D suggest that methods, equipment, and materials are readily available for reliable and effective disinfection of on-site sewage treatment system effluent. Conversely, anecdotal evidence suggests that currently available or chosen methods, equipment, and materials may be failing to meet expectations for reliability and effective disinfection to the levels required by Treatment Standard 1 and 2. In anticipation of nationally developed standards for disinfection equipment, DOH has written the interim document, Recommended Standards and Guidance for Disinfection Methods and Equipment.

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List of Systems Meeting Treatment Standards 1 and/or 2			
Standard	Performance level	Alternative System	
		Domain Status	System / Product
Treatment Standard 1	Meets or exceeds all parameters of the performance standard	Proprietary	<ul style="list-style-type: none"> Glendon Bio Filter TRD – 1000 Wastewater Treatment System Whitewater Aerobic Treatment Unit DF-50 in combination with the UV “The Disinfecter” unit.
		Public Domain	<ul style="list-style-type: none"> Stratified Sand Filter
	Meets or exceeds only BOD ₅ and TSS parameters of the performance standard. <u>Requires additional treatment to meet pathogen attenuation requirements.</u>	Proprietary	<ul style="list-style-type: none"> AdvanTex AX20N Wastewater Treatment System Alternating Intermittent Recirculating Reactor- AIRR Biomicrobics/FAST Wastewater Treatment System Clearwater Ecological System Clearstream Wastewater System with CS1100 Spin Filter Assembly Multi-Flo Waste Treatment System Nayadic Residential Sewage Treatment System Singulair Bio-Kinetic Wastewater Treatment System – 960 models Whitewater Aerobic Treatment Unit
		Public Domain	<ul style="list-style-type: none"> Intermittent Sand Filter Recirculating Sand (Gravel) Filter

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List of Systems Meeting Treatment Standards 1 and/or 2			
Standard	Performance level	Alternative System	
		Domain Status	System / Product
Treatment Standard 2	Meets or exceeds all parameters of the performance standard	Proprietary	<ul style="list-style-type: none"> Glendon Bio Filter TRD 1000 Wastewater Treatment System Whitewater Aerobic Treatment Unit DF-50 in combination with the UV "The Disinfecter" unit.
		Public Domain	<ul style="list-style-type: none"> Intermittent Sand Filter Stratified Sand Filter
	Meets or exceeds only BOD ₅ and TSS parameters of the performance standard. <u>Requires additional treatment to meet pathogen attenuation requirements.</u>	Proprietary	<ul style="list-style-type: none"> AdvanTex AX20N Wastewater Treatment System Alternating Intermittent Recirculating Reactor- AIRR Biomicrobics/FAST Wastewater Treatment System Clearwater Ecological System Clearstream Wastewater System with CS1100 Spin Filter Assembly Multi-Flo Waste Treatment System Nayadic Residential Sewage Treatment System Singular Bio-Kinetic Wastewater Treatment System – 960 models Whitewater Aerobic Treatment Unit
		Public Domain	<ul style="list-style-type: none"> Recirculating Sand (Gravel) Filter

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Approved Wastewater Tanks

Introduction

The following section presents manufacturer and product information for various wastewater tanks. This information is presented in two lists:

- ◉ **Concrete Tanks Approved by Local Health Jurisdictions** (*statewide, by county*)

These tanks, approved by local health departments / districts, are acceptable to Department of Health and may be used statewide.

Please note that some local health jurisdictions do not have a formal process for evaluating wastewater tanks. Designers are advised to check with the local health jurisdiction to confirm which tanks are permitted.

This list is frequently updated, yet may not contain all tanks in current use in a given county. Local health jurisdictions may add or make corrections to this list by contacting the department.

- ◉ **Concrete Tanks Approved by the Washington State Department of Health**

This list reflects information about wastewater tank reviews and approvals by the department since January 1, 1995. These tanks may be used statewide.

- ◉ **Non-Concrete Tanks Approved by the Washington State Department of Health.**

This list contains tanks constructed with fiberglass or polyethylene. This list reflects information about wastewater tank reviews and approvals by the department since January 1, 1995. These tanks may be used statewide.

Answers to questions regarding wastewater tank standards or information about application for product review and approval may be obtained from Richard Benson, P.E. at (509) 456-6177 or Richard.Benson@doh.wa.gov.

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Adams	M-1 Tanks 440 Rainier view Lane Moses Lake, WA 98837 (509) 766-2914	One.....	670 (pump)
		Two.....	1,000 (septic)
		Two.....	1,250 (septic)
Asotin-Garfield	Early Bird Supply, Inc 1508 15 th Street Clarkston, WA 99403 (509) 758-3333	One.....	1,000 (pump)
		Two.....	1,000
Benton-Franklin	Bert's Excavating PO Box 73 Sunnyside, WA 98944	Two.....	1,000
	Pipe, Inc. PO Box 9156 Tacoma, WA 98409	Not Provided	2,100
	Selah Concrete Products 319 West First Street Selah, WA 98942	Two.....	1,000
		Two.....	1,250
	Wilbert Precast, Inc. 2215 East Brooklyn Spokane, WA 99217 (509) 325-4573 (800) 888-4573	Not provided Not provided Not provided	1,000 1,250 1,500
	Yakima Cement Products 1202 South First Yakima, WA 98907	Not provided	1,000
Bremerton-Kitsap <i>(Name changed to Kitsap Health District)</i> See "Kitsap"			

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Chelan-Douglas	Godbey Red-E-Mix Concrete, Inc 912 SW Ansel Brewster, WA 98812	Two..... Two.....	1,000 1,250
	H2 Precast Concrete Products PO Box 3568 Wenatchee, WA 98807	One..... Two..... Two..... Two.....	750 (pump) 1,500 (septic) 1,000 1,250
	Quality Construction PO Box 39 Wenatchee, WA 98801 Contact: John Wood	Two..... Two.....	1,000 1,500
Clallam	Peninsula Septic Tanks 1370 Woodcock Road Sequim, WA 98382 (360) 683-4714	One..... Two..... Two..... Two..... Two.....	750 (pump) 1,000 1,250 1,500 2,000
Columbia	Not Provided		
Cowlitz	No Concrete Tanks on list.		
Grant	M-1 Tanks 440 Rainier View Lane Moses Lake, WA 98837 (509) 766-2914	One..... Two..... Two.....	670 (pump) 1,000 1,250
Grays Harbor	Atlas Concrete Products, Inc. 19221 Sargent Road Rochester, WA 98579	Two.....	1,200 (septic)
	Central Reddi-Mix, Inc. 1419 Bishop Road Chehalis, WA 98532	One..... Two.....	750 (pump) 1,150 (septic)

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Grays Harbor (Cont'd)	Evergreen Concrete Products 13212 Valley Ave. E Sumner, WA 98390	One..... Two.....	750 (pump) 1,100 (septic)
	Northwest Cascade, Inc. 16207 Meridian Road Puyallup, WA 98373	Two.....	1,125 (septic)
Island	Berg Vault Company of WA, Inc. 2308 Cedardale Road Mount Vernon, WA 98274 (360) 424-4999	Not provided	1,000 1,250 1,750
	Cuz Concrete Products 19604 67th Avenue NE Arlington, WA 98223 (360) 435-5531 (360) 435-8134 (FAX) (800) 659-1941	Not provided	1,000 1,250 1,500
	Everett Bros. Construction Co. PO Box 761 Oak Harbor, WA 98277 (360) 675-2727	Not provided	1,000
	Pacific Pre-Cast PO Box 1761 Oak Harbor, WA 98277 (360) 679-0702 (360) 675-9560	Not provided	1,000
	Stanwood Redi-Mix 2431 Larson Road Stanwood, WA 98292 (360) 652-7777	Not provided	1,000 1,200
	Whidbey Island Sand and Gravel PO Box 434 Freeland, WA 98249 (360) 321-6101	Not provided	1,000

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Island (Cont'd)	William Crane & Precast PO Box 638 Freeland, WA 98249 (800) 755-5506	Not provided	1,000 1,250
Jefferson	Cotton Ready Mix	One..... Two.....	700 (pump) 1,000
Kitsap (Formerly Bremerton- Kitsap)	Evergreen Pre-Cast, Inc. P.O. Box 58 Sumner, WA 98390 Phone: (253) 863-6510	One..... One..... Two..... Two..... One.....	750 (pump) 1,100 (pump) 1,100 (septic) 1,500 (septic) 1,700 (pump)
	Fred Hill Materials P.O. Box 6 Poulsbo, WA 98370 Phone: (360) 779-4431 Contact: Eric Smallbeck	One..... One..... Two..... One..... Two..... One..... Two.....	500 (pump) 1,100 (pump) 1,100 (septic) 1,250 (pump) 1,250 (septic) 1,000 (pump) 1,500 (septic)
	Kurt's Precast, Inc. P.O. Box 99 Belfair, WA 98528 Phone: (360) 275-1996 Contact: Kurt	One..... One..... Two..... One..... Two.....	500 (pump) 1,125 (pump) 1,125 (septic) 1,500 (pump) 1,500 (septic)
	Northwest Cascade P.O. Box 73399 Puyallup, WA 98373 Phone: (800) 444-2371 Contact: JR Inman	One..... One..... Two..... One..... Two.....	750 (pump) 1,000 (pump) 1,000 (septic) 1,200 (pump) 1,200 (septic)
Kittitas	Evergreen Precast PO Box 58 Sumner, WA 98390 (206) 863-6510	Two..... Two.....	1,000 1,500

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Kittitas (Cont'd)	H2 Precast Concrete Prod, Inc PO Box 3568 Wenatchee, WA 98807 (360) 884-6644 Contact: Larry Haven	Two..... Two.....	1,000 1,250
	M-1 Tanks 440 Rainier View Lane Moses Lake, WA 98837 (509) 766-2914	Two.....	1,000
	Panhandle Concrete 675 West Dalton Avenue Coeur d'Alene, ID 83814 (208) 667-8179	Two.....	1,000
	Selah Concrete Products 319 South First Street Selah, WA 98942 (509) 697-4755	Two..... Two.....	1,000 1,250
	Sno-Valley Concrete Products 19401 State Road Monroe, WA 98272 (206) 788-5686	Two.....	1,000
	Stuth Company PO Box 950 Maple Valley, WA 98038 (206) 255-3546	Two.....	1,000
	Wilbert Precast, Inc. 2215 East Brooklyn Spokane, WA 99217 (509) 325-4573 (800) 888-4573	Two..... Two..... Two.....	1,000 2,000 2,500
	Yakima Precast, Inc. 1210 South First Street, Suite 104 Yakima, WA 98901 (509) 248-1984	Two.....	1,000

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Lewis	Atlas Concrete Products 19221 Sargent Road Rochester, WA 98579 (360) 354-3912	Not provided	
	Central Reddi Mix, Inc. 305 East Summa Centralia, WA 98531 (360) 736-1131	Not provided	
	Northwest Cascade PO Box 73399 Puyallup, WA 98373	Not provided	
	Roto-Tech 201 Carlisle Coos Bay, OR 97420	Not provided	
Lincoln	Godbey Red-E-Mix Concrete, Inc 912 SW Ansel PO Box 505 Brewster, WA 98812 (509) 689-2415	Two..... Two.....	1,000 1,250
	M-1 Tanks 440 Rainier View Lane Moses Lake, WA 98837 (509) 766-2914	Two.....	1,000
	Wilbert Precast, Inc. 2215 East Brooklyn Spokane, WA 99217 (509) 325-4573 (800) 888-4573	Two..... Two..... Two..... Two..... Three.....	1,000 1,500 2,000 2,500 1,500
	White Block Co. 6219 East Trent Spokane, WA 99212 (509) 534-0651	Two..... Two..... Two..... Two..... Three.....	1,000 1,500 2,000 2,500 1,500

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Mason	Not Provided		
NE Tri-County: <i>Ferry, Stevens, Pend Oreille</i>	Colville Valley Concrete Corp. 1175 East 3 rd Colville, WA 99114 (509) 684-2534	One..... Two..... Two..... Two Three.....	1,500 (mono) 500 (mono-pump) (Note: mono" means monolithic pour.) 1,000 (2 piece) 1,000 (mono) 1,500 (mono)
	Godbey Red-E-Mix Concrete, Inc 912 SW Ansel PO Box 505 Brewster, WA 98812 (509) 689-2415	Two..... Two.....	1,000 1,250
	Wilbert Precast, Inc. 2215 East Brooklyn Spokane, WA 99217 (509) 325-4573 (800) 888-4573	Two..... Two..... Two..... Two..... Three.....	1,000 1,500 2,000 2,500 1,500
	Toner's Sand & Gravel East 4611 Eloika Road Chattaroy, WA 99003 (509) 325-4573	Two.....	1,250
	White Block Co. 6219 East Trent Spokane, WA 99212 (509) 534-0651	Two..... Two..... Two..... Two..... Three.....	1,000 1,500 2,000 2,500 1,500
Okanogan	Cascade Concrete Products, Inc. PO Box 2435 Winthrop, WA 98862 (509) 996-2435	One (oval)..... One (oval)..... Two (oval)..... Two (rectangle).... Two (oval).....	1,000 (pump) 1,250 (pump) 1,000 1,000 1,250

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Okanogan (Cont'd)	Godbey Red-E-Mix Concrete, Inc 912 SW Ansel PO Box 505 Brewster, WA 98812 (509) 689-2415	One..... One..... Two..... Two.....	1,000 (pump) 1,250 (pump) 1,000 1,250
	Okanogan Valley Concrete, Inc 2145 Elmway Okanogan, WA 98840 (509) 422-3211	One (round)..... One (oval)..... One (rectangle)..... Two (oval)..... Two (rectangle).....	500 (pump) 1,000 (pump) 1,250 (pump) 1,000 1,250
	South Okanogan Concrete Products, LTD. Box 419 Osoyoos, B.C. VOH 1VO CANADA (604) 495-7556	One..... One..... One..... One..... Two..... Two..... Two.....	800 (pump) 1,000 (pump) 1,250 (pump) 1,500 (pump) 1,000 1,250 1,500
Pacific	Dennis Company Redi-Mix PO Box 891 Ilwaco, WA 98624 (360) 642-3153	One..... One..... Two.....	500 (pump) 1,000 (pump) 1,000 (septic)
San Juan	Berg Vault Company of WA, Inc. 2308 Cedardale Road Mount Vernon, WA 98274 (360) 424-4999	Not provided	
	Cuz Concrete Products 19604 67th Avenue NE Arlington, WA 98223 (360) 435-5531 (360) 435-8134 (FAX) (800) 659-1941	Not provided	
	Island Concrete Products 1793-B Cattle Point Road Friday Harbor, WA 98250 (360) 378-5878	Not provided	

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
San Juan (Cont'd)	Lopez Sand & Gravel Route 1, Box 2382 Lopez, WA 98261 (360) 468-2320	Not provided	
	Sea Island Sand & Gravel Route 1, Box 81-C Eastsound, WA 98254 (360) 376-4215	Not provided	
Seattle-King			<u>Legend for Seattle-King liquid capacity:</u> P = Pump tank S = Septic tank H = Holding tank
	Campbell's Pre-Cast 11515 120 th Street E Puyallup, WA 98373	Two.....	890 (P) 1,125 (S, P, H)
	Cuz Concrete Products 19604 67th Avenue NE Arlington, WA 98223 (360) 435-5531 (360) 435-8134 (FAX) (800) 659-1941	Two..... Two..... Two..... Two..... One.....	1,000 (S, P, H) 1,250 (S, P, H) 1,500 (S, P, H) 1,750 (S) 1,750 (P)
	Evergreen Precast PO Box 58 Sumner, WA 98390 (206) 863-6510	One..... One..... One..... Two..... One..... Two..... One..... Two.....	1,100 (S, P, H) 730 (P) 1,500 (P, H) 1,500 (S, P, H) 1,000 (S, P, H) 1,000 (S, P, H) 3,000 (S, P, H) 3,000 (S, H)
	Northwest Cascade PO Box 73399 Puyallup, WA 98373	Two..... One..... Not provided Not provided	1,125 (S, P, H) 750 (P) 1,000 (S, P, H) 1,750 (S, P, H)

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Seattle-King (Cont'd)	Puget Sound Concrete PO Box 436 Carnation, WA 98014	Two.....	750 (P) 1,000 (S, P, H)
	Quality Concrete Products PO Box 1703 Woodinville, WA 98072	Two.....	1,000 (S, P, H)
	Sno-Valley Concrete 19401 State Route 203 Monroe, WA 98272	One..... Two.....	750 (P) 1,000 (S, P, H)
Skagit	Berg Vault Company of WA, Inc. 2308 Cedardale Road Mount Vernon, WA 98274 (360) 424-4999	One..... One..... Two.....	400 (pump) 750 (pump) 1,000
	Concrete Nor'west 1031 Hampton Road Lynden, WA 98264 (360) 364-3243		
	Cuz Concrete Products 19604 67th Avenue NE Arlington, WA 98223 (360) 435-5531 (360) 435-8134 (FAX) (800) 659-1941	One.....	1,000
	Everett Brothers Ready-Mix, Inc. 3651 State Hwy 20 Oak Harbor, WA 98277 (206) 657-2727 (206) 675-2215	One.....	1,000
	Pacific Precast PO Box 1761 Oak Harbor, WA 98277 (360) 679-0702 (360) 678-5617 Contact: Doug Tacia	One..... Two.....	600 (Pump) 1,000

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Skagit (Cont'd)	Stanwood Redi-Mix 2431 Larson Road Silvana, WA 98287 (360) 652-7886 (360) 652-7777	Two.....	1,000
		Two..... One.....	1,250 120 (pump)
Snohomish	Berg Vault Company of WA, Inc. 2308 Cedardale Road Mount Vernon, WA 98274 (360) 424-4999	Not Provided	750 (pump) 1,000
	Cuz Concrete Products 19604 67th Avenue NE Arlington, WA 98223 (360) 435-5531 (360) 435-8134 (FAX) (800) 659-1941	Not Provided	750 (pump) 1,000 (septic/pump) 1,250 (septic/pump) 1,500 (septic/pump)
	Sno-Valley Concrete Prod, Inc. 19401 State Route 203 Monroe, WA 98272 Contact: Dave Soloman	One..... One..... Two.....	750 (pump) 1,000 (pump) 1,000 (septic)
	Stanwood Redi-Mix PO Box 68 2431 Larson Road Silvana, WA 98287 (360) 652-7886 (360) 652-7777 Contact: Kim Schultz	One..... Two.....	750 (pump) 1,000
	Stuth Company PO Box 950 Maple Valley, WA 98038 (206) 255-3546	Not Provided	750 (pump) 1,000 (septic / pump) 1,750 (septic / pump)

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Southwest: Clark, Skamania, Klickitat	(Atlas Tanks) Cuz Concrete Products 19604 67 th Avenue NE Arlington, WA 98233 (360) 435-5531 (360) 435-8134 (FAX) (800) 659-1941	Two..... Two..... Two.....	1,000 1,250 1,500
	D & K 15008 NE 15 th Avenue Vancouver, WA 98665 (360) 573-4020		1,000 1,250 1,500
	Home & Farm Concrete 2625 NE Goodwin Road Camas, WA 98607 (360) 696-3789	Two..... Two..... Two.....	1,000 1,250 1,500
	Michaels Precast 35125 SE Highway 211 Boring, OR 97009 (541) 668-4073	Two.....	1,000
	S & K Tanks Route 1, Box 1019 Prosser, WA 99350 Contact: Rick Murphy	Two.....	1,000
	Riley Brothers Concrete, Inc. PO Box 718 Bingen, WA 98805	Two..... Two.....	1,000 1,250
	Sound Redi Mix CRI Engineering 4562 Westside Highway Castle Rock, WA 98661 (360) 507-4311 (360) 274-5355 (FAX)	Three.....	2,633

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Southwest: Clark, Skamania, Klickitat (Cont'd)	Willamette Greystone, Inc. 2405 NE 244 th Avenue Portland, OR 97060 (503) 669-7612	Two.....	1,000
		Two.....	1,250
		Two.....	1,500
		Two.....	2,000
		Two.....	3,000
Spokane	Custom Excavating	Two.....	1,000
	Newport Concrete	Two.....	1,000
	Panhandle Concrete Products	Two.....	1,000
	Wilbert Precast, Inc. 2215 East Brooklyn Spokane, WA 99217 (509) 325-4573 (800) 888-4573	Two.....	1,000
		Two.....	1,500
		Two.....	2,000
		Two.....	2,500
		Three.....	1,500
	Toner's Sand & Gravel East 4611 Eloika Road Chattaroy, WA 99003 (509) 325-4573 Contact: Larry Toner	Two.....	1,000
		Two.....	1,000 (Delzotto)
	White Block Co. 6219 East Trent Spokane, WA 99212 (509) 534-0651	Two.....	1,000
		Two.....	1,500
		Two.....	2,000
		Two.....	2,500
		Three.....	1,500
Tacoma – Pierce	Evergreen Precast PO Box 58 Sumner, WA 98390 (206) 863-6510	One.....	750
		One.....	1,000
		One.....	1,500
		One.....	1,000
		Two.....	1,500

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Tacoma – Pierce (Cont'd)	Northwest Cascade PO Box 73399 Puyallup, WA 98373	One.....	1,500
		One.....	1,000
		One.....	1,500
	Stuth Company PO Box 950 Maple Valley, WA 98038 (206) 255-3546	Not provided	750
			1,000
			1,750
	White's Inc. 8914 Villa Beach RD Anderson Island, WA 98303	Two.....	1,000
Thurston	Atlas Concrete Products 19221 Sargent Rochester, WA 98579 Contact: Rod Liseth	One.....	400
		One.....	800
		One.....	1,150
		Two.....	1,150
		Two.....	1,200
	Campbell Pre-Cast Concrete PO Box 1522 Graham, WA 98388 Contact: Jim Campbell, Jr.	Two.....	1,000
	Central Redi-Mix 1836-B Carpenter Road NE Olympia, WA 98506 Contact: Tom Brakken	One.....	800
		One.....	380
		Two.....	1,150
	Evergreen Pre-Cast PO Box 58 Sumner, WA 98390	Two.....	1,100
	Northwest Cascade PO Box 73399 Puyallup, WA 98373 Contact: Dave Turgeon	Two.....	1,125
		Two.....	1,150

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Thurston (Cont'd)	Stuth Company, Inc. PO Box 950 Maple Valley, WA 98038 (206) 255-3546	One..... Two..... Nibbler.....	750 1,000 1,750
Wahkiakum	Not provided		
Walla Walla	Koncrete Industries 1360 Dell Avenue Walla Walla, WA 99362	Not provided	1,200
	Rada & Sons 15 East Ice Harbor Drive Pasco, WA 99301	Not provided	1,000 1,600
	Reese Concrete Products 1606 South Ely Kennewick, WA 99337-2899	Not provided	1,000 1,600
	Selah Concrete Products 319 South First Avenue Selah, WA 98942	Not provided	1,000 1,250
Whatcom	Bode's Precast 144 River Road Lynden, WA 98264 360-354-3912	Not provided	750 900 1,000 1,250 1,500 500 (pump)
	Vanderveen Precast 8077 Guide Meridian Lynden, WA 98264	Not provided	750 900 1,000 1,250 1,500 500 (pump)
Whitman	Not provided		

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List of County-Approved Concrete Septic Tanks and Pump Chambers			
County	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Yakima	Bert's Precast Septic Tanks 1506 Sunnyside-Mabton Road Sunnyside, WA 98944 (509) 837-2117 (509) 837-6282	One..... Two..... Three.....	1,000 1,250 1,500 1,000 1,250 1,500 1,500
	Ground Level Construction 400 East Selah Road Yakima, WA 98901 (509) 575-1668	Not provided	
	Quick's Concrete Finishing 181 Quick Lane Zillah, WA 98953 (509) 865-4269 (509) 865-2710	Not provided	
	Selah Concrete Products 319 South First Avenue Selah, WA 98942 (509) 697-4755	Not provided	
	Wilbert Precast, Inc. 2215 East Brooklyn Spokane, WA 99217 (509) 325-4573 (800) 888-4573	Not provided	
	Valley Septic Services 903 Ahtanum Road Union Gap, WA 98903 (509) 248-6810 (509) 248-1608	Two.....	1,000 1,250
	Yakima Precast, Inc. 1210 South First Street Yakima, WA 98901 (509) 248-1984	Not provided	

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Concrete Tanks Approved by the Washington State Department of Health

These tanks may be used statewide. This list consists of concrete wastewater tanks that have been reviewed and approved by DOH since January 1, 1995.

List of State-Approved Concrete Septic Tanks and Pump Chambers			
Description	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Concrete	Evergreen Pre-Cast, Inc. PO Box 58 Sumner, WA 98390 (253) 863-6510	One..... Two..... Two..... Two.....	3,000 3,000 2,140 (December 2003) Whitewater Tank (September 2004)
	Central Reddi-Mix, Inc. 305 East Summa Centralia, WA 98531 (360) 458-3088	Two.....	1,500 (August 2003)
	Sound Ready-Mix of Castle Rock, WA 4562 Westside Highway Castle Rock, WA 98611	Three.....	2,633
	Utility Vault Company PO Box 588 Auburn, WA 98071-0588 (800) 892-1538 (253) 839-3500	Two (*Model 818-8)	7,200 (septic)
		One..... (*Model 818-9)	8,400 (pump)
	*Approved with conditions. Contact the Large Onsite Sewage System (LOSS) Program Office in Spokane at (509) 456-4431 for details.		
	Wilbert Precast, Inc. 2215 East Brooklyn Spokane, WA 99217 (800) 888-4573 (509) 325-4573	One..... Two..... Two..... Two..... Two.....	1,000 (monolithic) 1,000 (monolithic) 1,250 (monolithic) 1,500 (monolithic) 1,000 (monolithic) with 500 (pump) (October 2004)

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List of State-Approved Non-Concrete Septic Tanks and Pump Chambers -- Fiberglass			
Description	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Fiberglass	Fiber Septic Systems, Inc. Ninth and Harris Bellingham, WA 98225 (360) 733-6248	Two.....	1,000 1,250 (June 1992)
	Fextex Systems, Inc. 732 North 16th AVE Suite 21 Yakima, WA 98902 (509) 965-8437	One, Two, or Three One, Two, or Three One, Two, or Three One, Two, or Three One, Two, or Three One, Two, or Three One, Two, or Three One, Two, or Three	3,000 4,000 6,000 8,000 10,000 12,000 15,000 20,000
	ATTBAR, Inc. 5985 South 6 th Way Ridgefield, WA 98642 (888) 887-3581	One or Two..... Two.....	1,000 1,500
	Orenco Systems, Inc. 814 Airway Avenue Sutherlin, OR 97479 (800) 348-9843 (541) 459-4449 (541) 459-2884 (FAX)	One..... One or Two..... Two.....	750 1,000 1,500
	Western Industrial Laminations, LTD. 301 - 19837 Telegraph Trail Langley, B.C. V3A 4P8 CANADA (604) 986-8070	Two.....	1,000 1,250 1,500 1,800 2,000

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List of State-Approved Non-Concrete Septic Tanks and Pump Chambers -- Polyethylene			
Description	Manufacturers	Number of Compartments	Liquid Capacity (gallons)
Polyethylene	NORWESCO, Inc. 4365 Steiner Street PO Box 439 St. Bonifacius, MN 55375-0439 (952) 446-1945	Two.....	1,000 1,250 1,500 (March 1992)
		Two..... Two..... Two.....	1,000 (Bruiser Tanks) 1,250 1,500 (June 2003)
	Den Hartog Industries, Inc. PO Box 425 Hospers, IA 51238-0425 (712) 752-8432 (800) 342-3408	Two..... (Model AST-1000-2 HDPE)	1,000 (July 2003)
	Premier Plastics, Ltd. 8328 River Way Delta, B.C. V4G 1C4 CANADA (800) 661-4473 (Canada & USA) (604) 952-6686 (604) 952-6696 (FAX)	One..... (Model PCU 760 "Saturna")	760
		Two..... (Model STSU 1000)	1,000 (July 1995)
	Roto Tech Industries 201 Carlisle Coos Bay, OR 97420 (541) 267-4804		1,250 (September 1991) 1,000 (February 1992)
	Snyder Industries, Inc. 602 Industrial Drive Marked Tree, AR 72365 870-358-3400	One (spherical)..... One (spherical)..... One or Two (ribbed) One or Two (ribbed) One or Two (ribbed) One or Two (ribbed)	300 500 750 1,050 1,250 1,500 (February 2003)

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